

Miami-Dade Water and Sewer Department

Water Supply Planning

April 18, 2012

MDWASD Overview

- Largest water and sewer utility in Florida, serving more than 2.2 million residents
- Water System:
 - 3 large regional and 5 small water treatment plants
 - Supplying an average of 306 million gallons per day (MGD)
 - 90% of the County's public water supply
 - Per capita water use 134 gpcd
 - 15 wholesale customers
 - 422,016 retail customers
 - 100 water supply wells
 - 7,739 miles of pipes (from 2" to 96")
 - 38,331 fire hydrants
 - 124,000 valves (from 2" to 96")

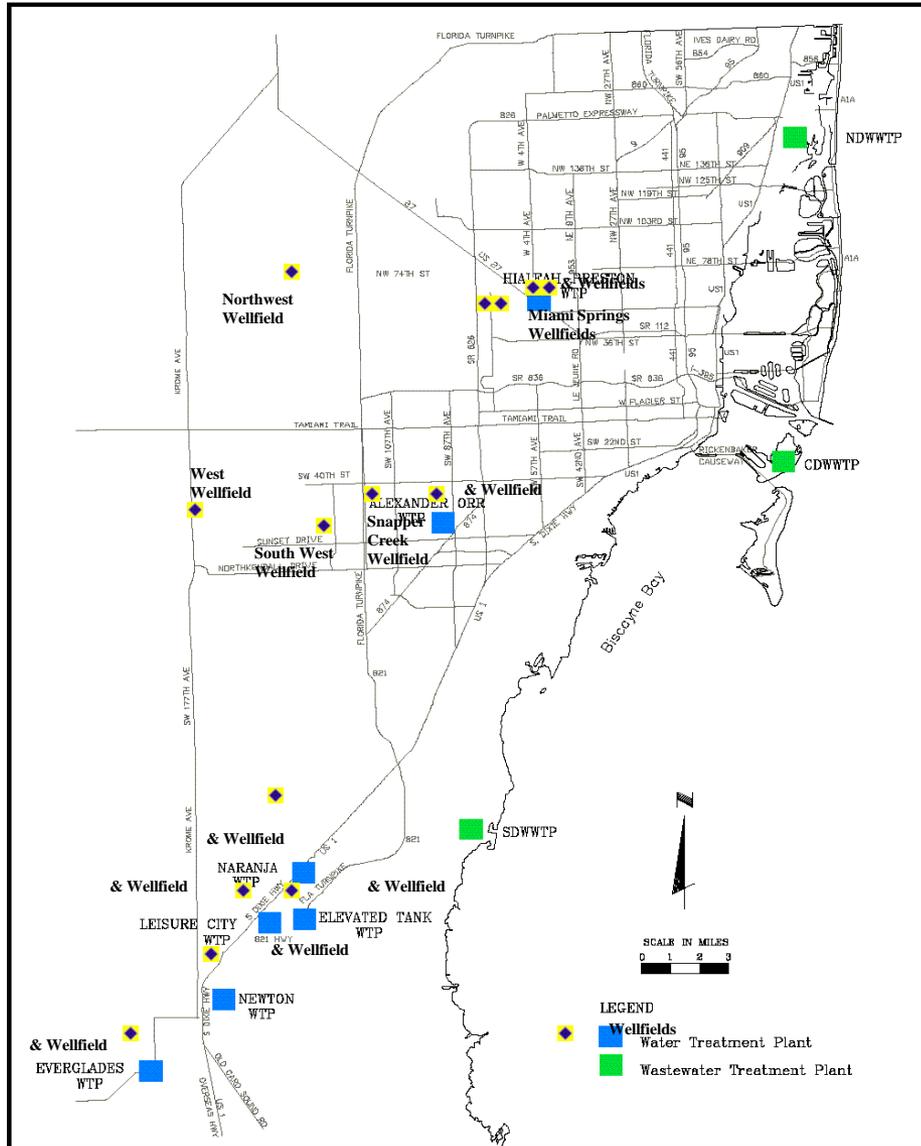


MDWASD Overview (continued)

- Wastewater System:
 - 3 wastewater treatment plants
 - 2 ocean outfalls and 21 deep injection wells
 - Collecting, treating, and disposing 288 MGD
 - 339,927 retail customers
 - 12 wholesale customers
 - 6,271 miles of mains and laterals
 - 1,039 sewer pumps stations (operated)
 - Reusing 10.2 MGD of wastewater
 - System Wide I/I Program



MDWASD Water & Wastewater Treatment Facilities



MDWASD - Water and Wastewater
Treatment Plant Locations

Figure
1

Water Use Permit

- Permit Approved by South Florida Water Management District Governing Board on November 15, 2007 and modified November 1, 2010
- Permit Expiration 2030
- Biscayne Aquifer Baseline Allocation Complies with Regional Water Availability Rule
- 52 Limiting Conditions

WUP continued

- Water Supply Sources:
 - Biscayne Aquifer
 - Floridan Aquifer
 - Reclaimed Water
 - Aquifer Storage and Recovery (ASR)
- Implementation of:
 - Conservation
 - Alternative Water Supplies
 - Reuse Projects
 - Water Loss Reduction Program

WUP AWS Projects

Floridan Aquifer as an alternative water supply

- Hialeah Reverse Osmosis plant



WUP Reclaimed Water Projects

- Biscayne Bay Coastal Wetlands Rehydration Pilot
- Power Plant Cooling
- Groundwater replenishment

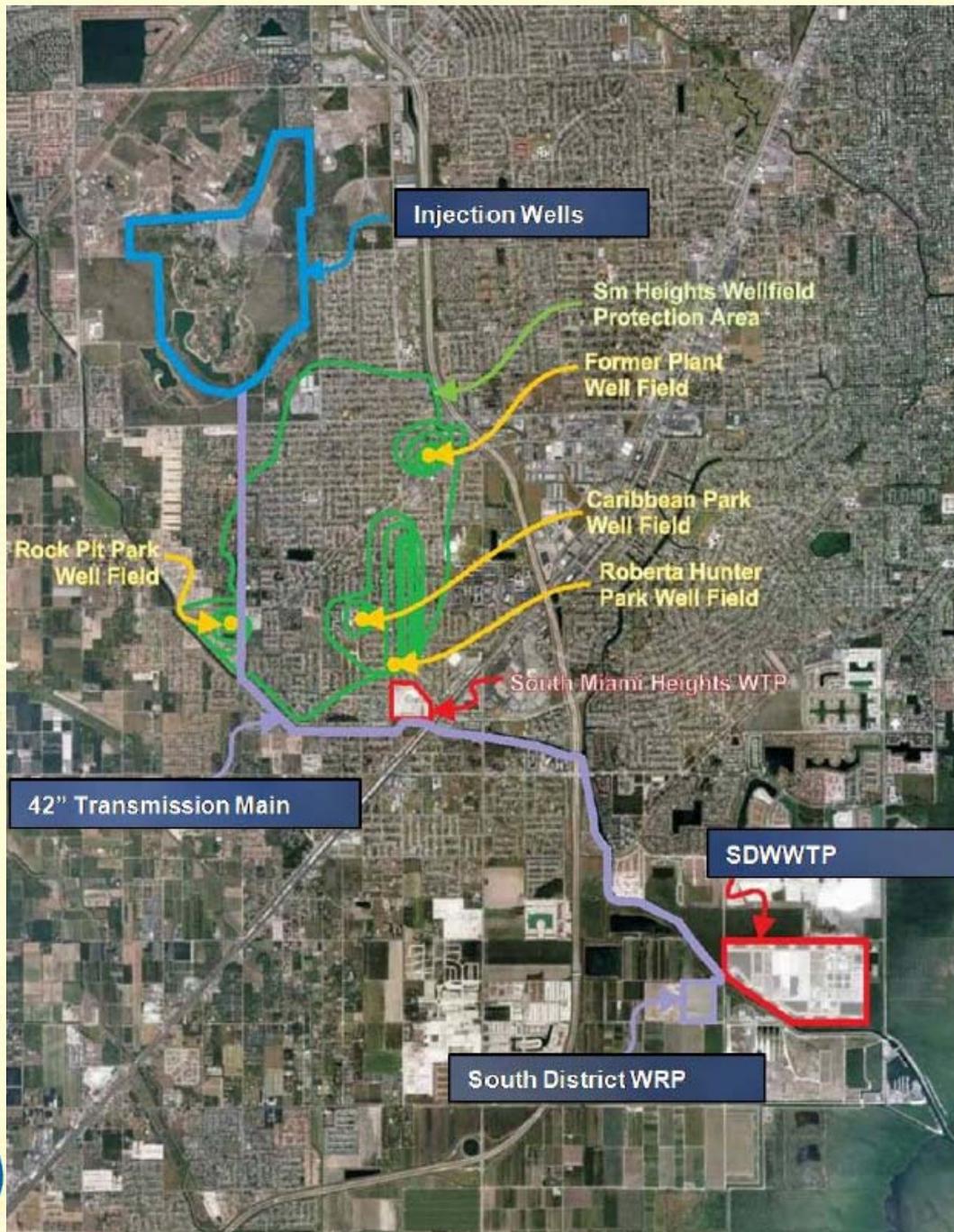


BBCW Rehydration Pilot Project

- Pilot required by WUP
- Pilot planning started in 2007
- Run pilot units from Nov 2010 to April 2011
- Submitted final report to SFWMD, FDEP and BNP on October 2011

Reclaimed Water to FPL

- Entered in Joint Participation Agreement with FPL in July 2010
- Up to 90 MGD of HLD water delivered to Turkey Point
- Current anticipated implementation dates: 2022 and 2023
- County pays for pipeline construction materials and labor



South District Water Reclamation Plant and Groundwater Replenishment

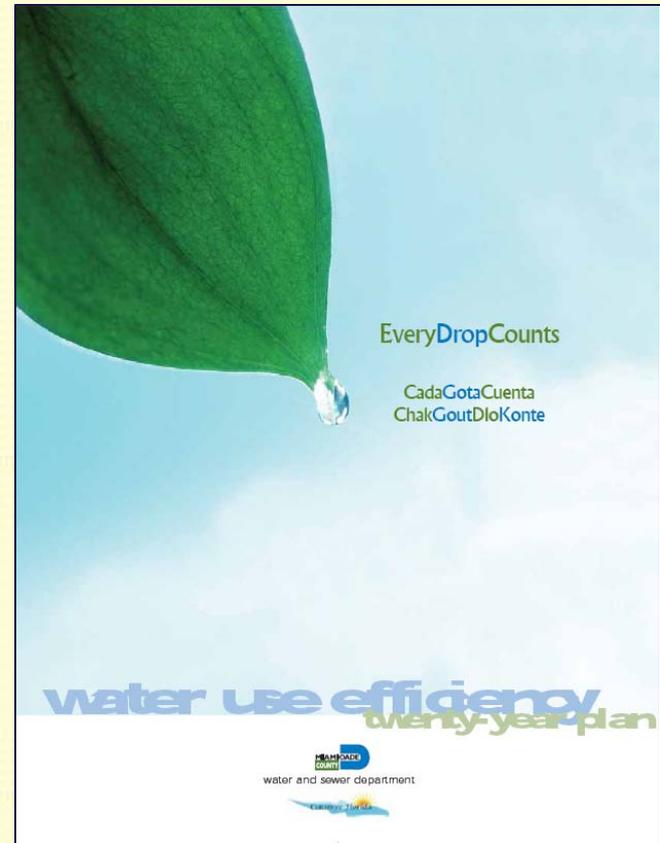
SDWWTP FDEP CO

- Implement High Level Disinfection prior to deep well injection (285 MGD)



Water Use Efficiency Plan

- A five year Plan approved by the Board of County Commissioners in April 2006
- In March 2007 expanded the Plan to 20-year as part of the Water Use Permit (WUP) application
- Plan includes:
 - Implementation of BMPs
 - Water Loss Reduction Program
 - Legislative Initiatives
 - Public Outreach



Water Savings Achieved Through BMPs

Year	Water Savings (MGD)	
	Planned	Reported
2007	1.085854	1.212308
2008	2.243228	3.476908
2009	3.529212	4.902751
2010	4.815196	6.541536
2011	6.10118	8.463445
2016	11.69942	--
2021	15.66834	--
2026	19.62226	--

2011 Water Savings BMPs

Category	Actual Gal. Of Water Saved Per Day	Actual Number of Applications
HET Rebate	74,414	2566
Senior & Low Income Retrofit	45,184	706
Single Family Showerhead	67,760	1936
Water Conservation Kits (Single Family)	17,004	1417
Multifamily Showerhead	99,995	2857
Water Conservation Kits (Multifamily)	31,416	2618
Green Lodging	4,851	3
Single Family Irrigation Evaluation	33,785	145
HOA Irrigation Evaluation	1,540,000	44
County Landscape Evaluations	7,500	17
	1,921,909.00	

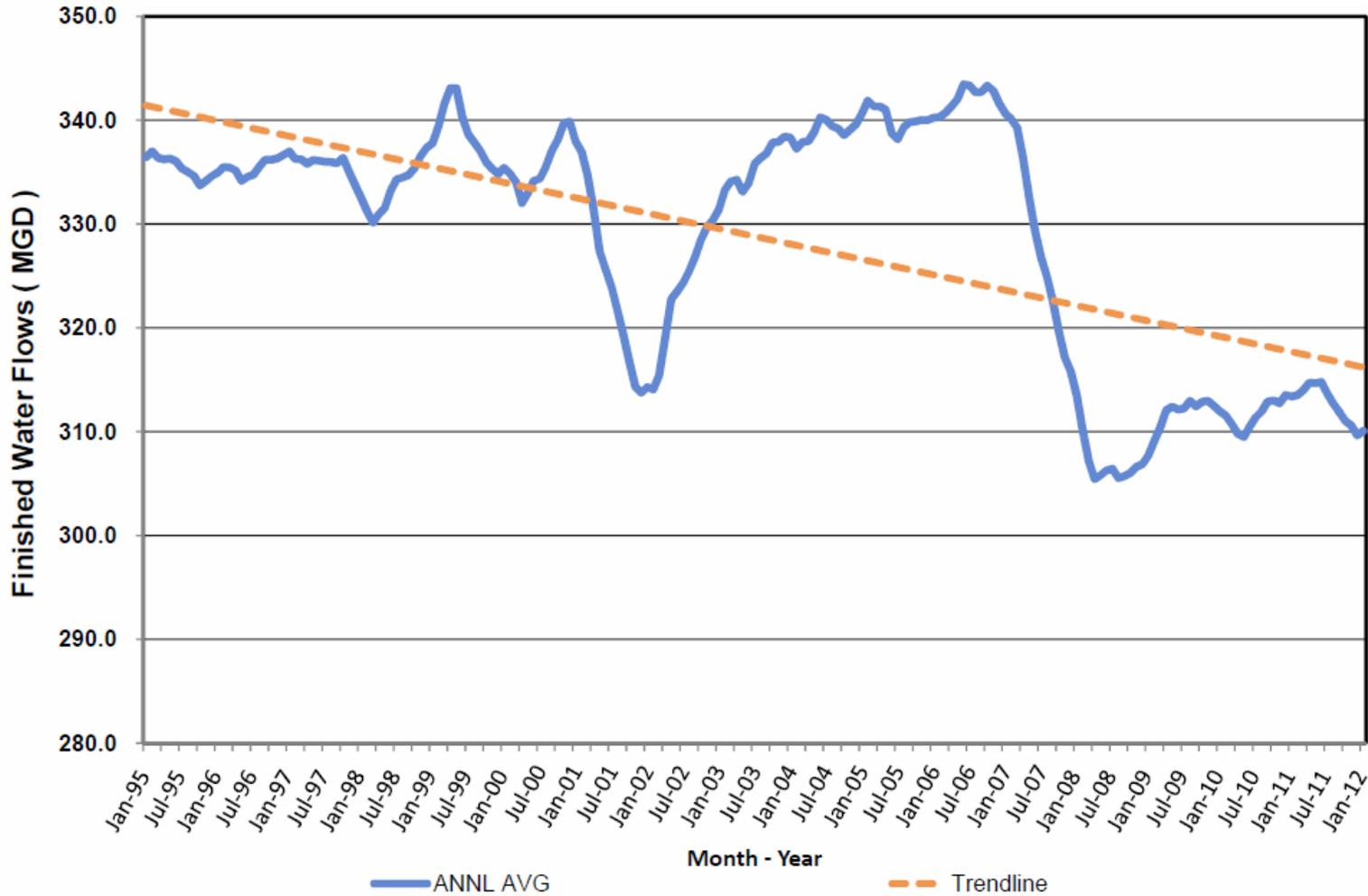
Policy Measures

Ordinances:

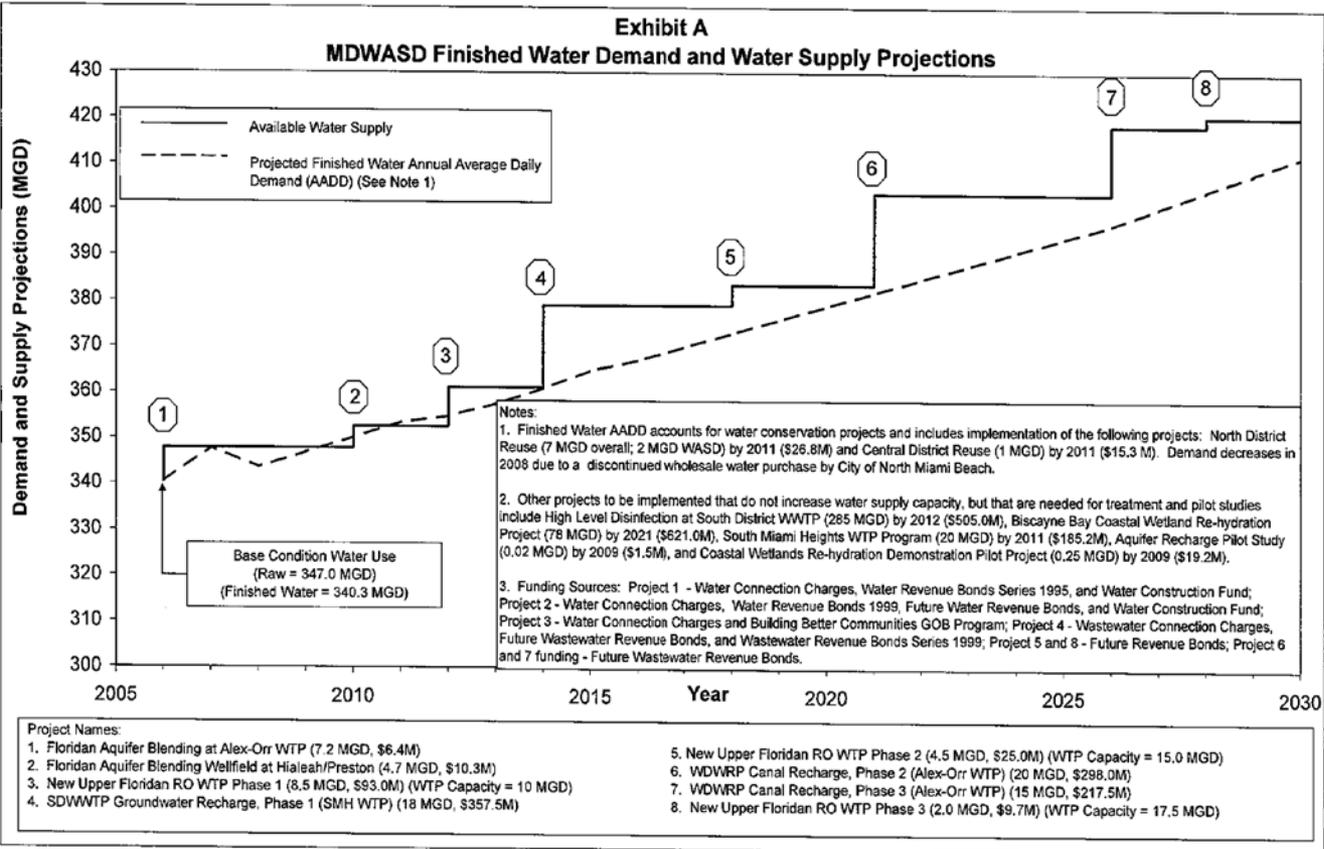
- Water Use Efficiency Standards for new developments and renovations (Effective January 2009)
- Permanent Landscape Irrigation Ordinance (Ord. 09-25)
- Landscape Ordinance Amendments (Section 18-A)



Miami-Dade Water and Sewer Department Regional and South Dade Water Treatment Plants Annual Average Daily Finished Water Flows



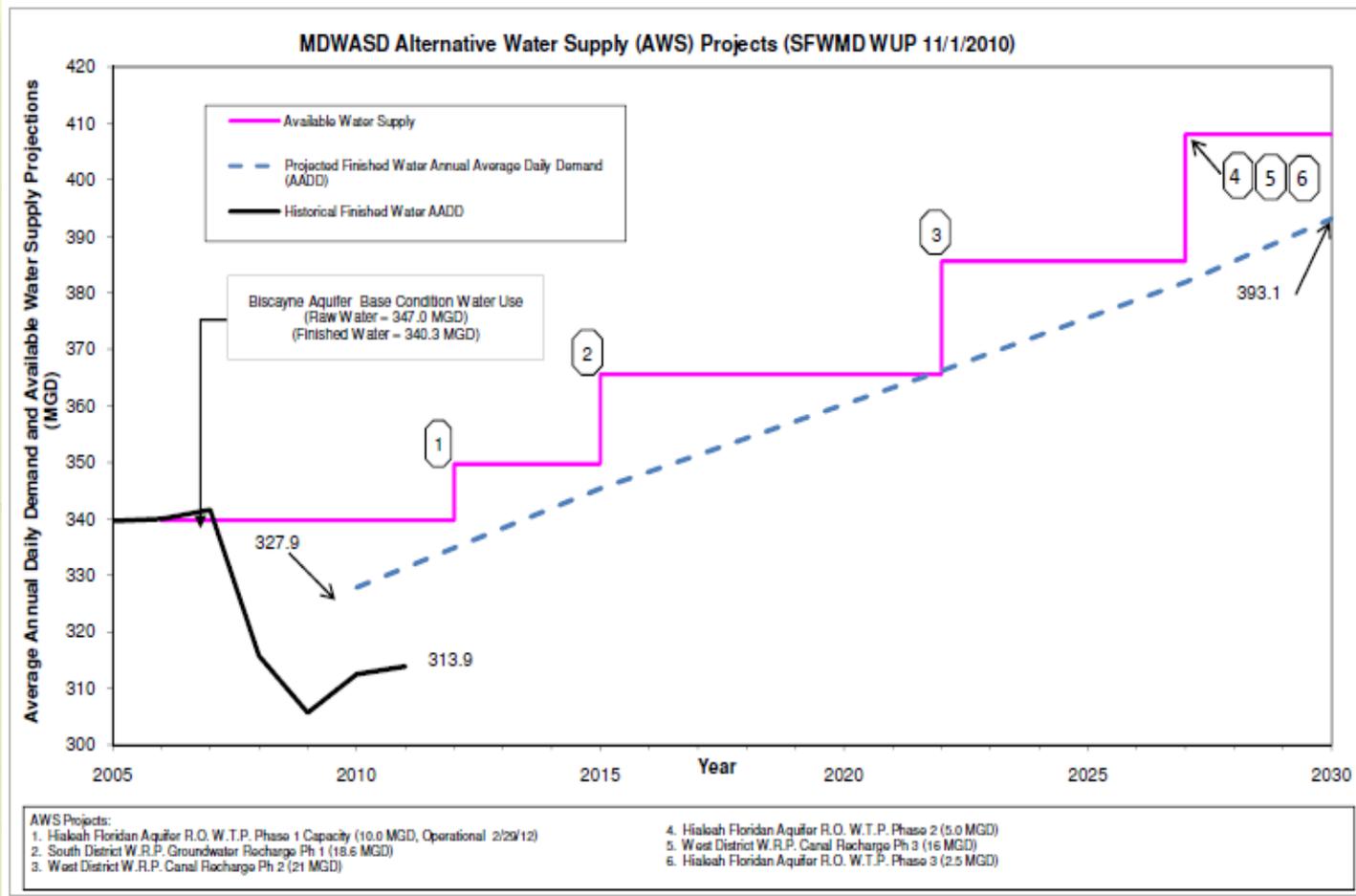
Water Supply Planning



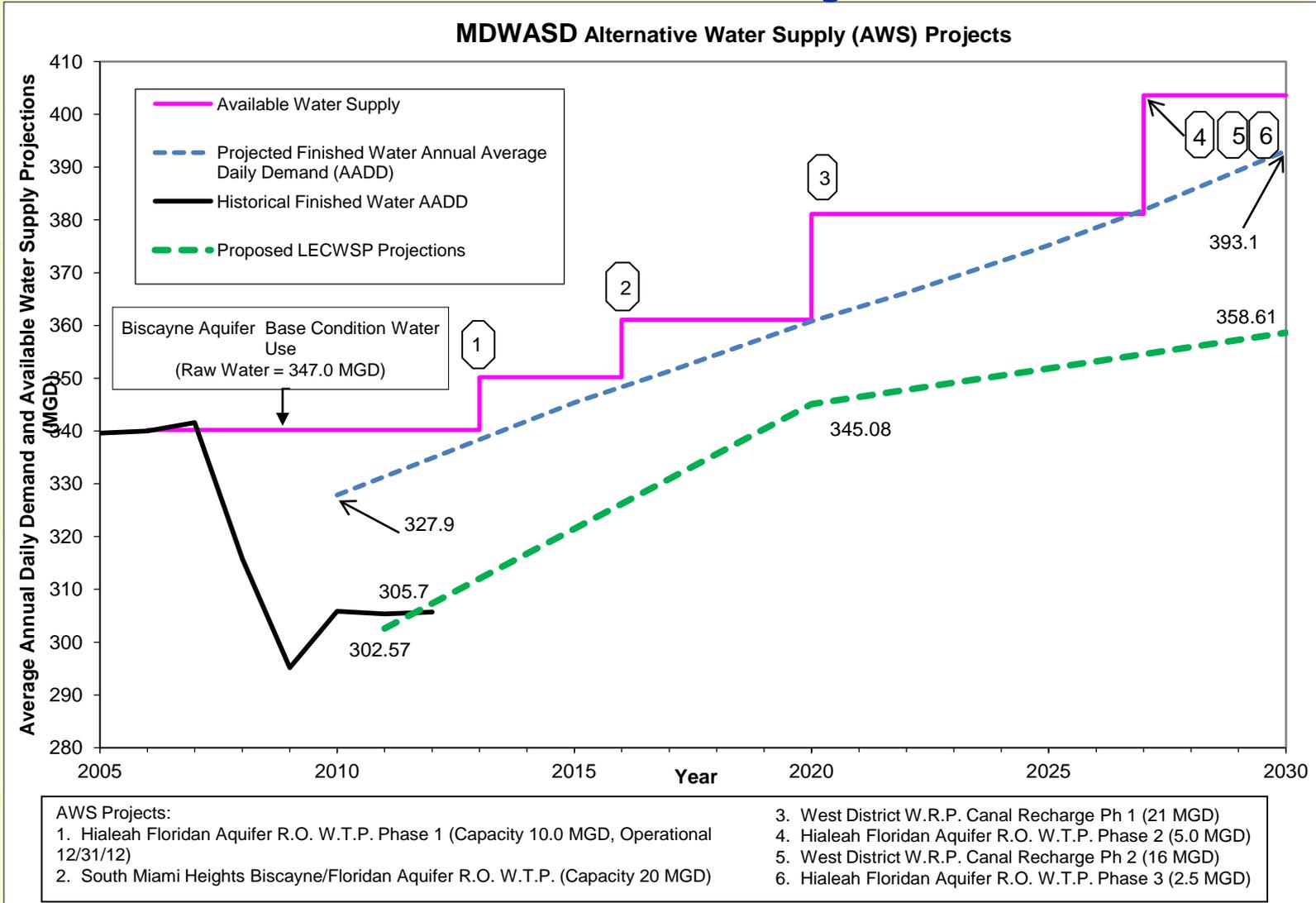
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EXHIBIT 28

Water Supply Planning



WUP and LECWSP Projections



WUP Modification Request

- Submitted application May 9, 2011
- Request based on:
 - Present water use reductions (finished water demands 35 MGD lower than anticipated in 2007)
 - Cost of groundwater replenishment project
- Proposed replacement of reclaimed water groundwater replenishment with Floridan aquifer water, at the South Miami Heights Water Treatment Plant (avoided cost \$300 M)

Ocean Outfalls

- On July 1, 2008, Senate Bill 1302 became effective
- The Bill requires:
 - July 1, 2013, submit implementation plan to FDEP
 - December 31, 2018, implement AWT for the North and Central District WWTPs' discharges, or equivalent nutrient load reduction
 - December 31, 2025, implement 60% reuse and stop discharging out the outfall, except as “backup discharge” to the functioning reuse system

OOL Implementation

- Need to implement 117 MGD of reuse
 - First were considering recharging Biscayne aquifer with reclaimed water (MF, RO, UV, Pex, & IE)
 - Currently evaluating the technical feasibility of recharging the Florida aquifer with reclaimed water (HLD), preferable all at the Central District WWTP (Virginia Key)
- Complete Plan by July 2013

Next Steps

- Prepare new water demand projections when Miami-Dade County Planning completes its 2030 projections by TAZs
- Reevaluate alternative water supply projects based on need, technical feasibility, and cost
- Utilize new Biscayne aquifer model (USGS) to optimize water withdrawals
- Submit 3rd WUP Modification
- Update water master plan, addressing climate change concerns